

Amendment and Response Under 37 C.F.R. 1.116 - - Expedited Examining Procedure

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Applicant(s): Wayne K. DUNSHEE et al.

Serial No.: 09/577,551

Confirmation No.: 5353

Filed: 24 May 2000

For: **ABRASION-RESISTANT INK COMPOSITIONS AND METHODS OF USE****Remarks**

The Final Office Action mailed 24 May 2002 has been received and reviewed.

Claims 11, 16, 25, 35, 37, and 39 having been amended, and claims 34 and 38 having been canceled, the pending claims are claims 11-13, 16-33, 35-37, 39-45, and 49-52. Claims 11, 16, 25, and 37, have been amended to recite an elastomeric bandage, and claim 39 has been amended to recite an elastomeric substrate which forms a part of the elastomeric bandage. Support for these amendments is found in the specification at page 6, lines 22-23. Claims 35 and 37 have been amended to depend from a pending claim.

Reconsideration and withdrawal of the rejections in view of the above amendments and the following comments are respectfully requested.

Telephone Interview

Applicants' Representative, Ann M. Mueting, thanks the Examiner for the courtesy extended during the telephone interview held August 5, 2002. Also present was Kathleen Franklin, Reg. No. 47,574. During the interview U.S. Pat. No. 5,162,141 (Davey et al.) was discussed.

The 35 U.S.C. §102 Rejection

The Examiner rejected claims 11, 13, 16-21, 23, 24, 25-27, 30-33 and 39-43 under 35 U.S.C. §102(b) as being anticipated by Davey et al. (U.S. Patent No. 5,162,141). Applicants respectfully traverse this rejection.

The present claims, as amended, recite methods for printing an image, improving durability of an image, and limiting abrasion of an ink on an elastomeric bandage. The methods include: coating an imagewise layer of a urethane polymer-containing ink composition onto an elastomeric substrate, which forms a part of the elastomeric bandage, wherein the urethane polymer includes a number average molecular weight in the noncross-linked form of about 1,500

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to about 50,000 (claim 11); printing an image onto an elastomeric substrate, which forms a part of the elastomeric bandage, using at least one ink composition including a stable nonpolyethylene containing aqueous dispersion of pigment and particles of a urethane polymer (claim 16); printing a first layer of ink onto an elastomeric substrate, which forms a part of the elastomeric bandage, the first layer of ink including a stable aqueous dispersion of pigment and particles of a urethane polymer; and printing an image over the first layer of ink wherein the last layer of ink, farthest from the substrate, includes a stable aqueous dispersion of pigment and particles of a urethane polymer (claim 25); and applying at least one ink composition including a water-based dispersion of a urethane polymer to an elastomeric substrate, which forms a part of the elastomeric bandage, in an imagewise fashion (claim 39).

Davey et al., on the other hand, neither teach nor suggest any methods for either printing an image on an elastomeric bandage, improving durability of an image on an elastomeric bandage, or limiting abrasion of an ink on an elastomeric bandage. Rather, Davey et al. relate to floor coverings. Specifically, Davey et al. disclose a polymeric sheet and incompatible ink which have a primer, including polyurethanes (Davey et al., column 3, line 42) interposed between the polymeric sheet and ink (Davey et al., column 2, lines 51-53), or an ink interposed between two layers of primer (Davey et al., column 3, lines 6-7). This adhesive system is particularly suitable for adhering incompatible lithographic ink or electrographic toner to a floor covering (Davey et al., abstract, lines 1-4). As such, Davey et al. do not disclose elastomeric bandages or methods of printing an image on an elastomeric bandage, improving the durability of an image on an elastomeric bandage, or limiting the abrasion of an ink on an elastomeric bandage.

Additionally, the Examiner made certain statements in the present Office Action with which Applicants disagree. At page 2, paragraph 4, the Examiner stated that many of the polymers of Davey et al. contain elastomeric properties necessarily. The Examiner also stated that Permuthane UE-40-570 (Davey et al., column 6, lines 50-68) is expected to necessarily possess a molecular weight within the range of Applicants' claims, a comment which Applicants

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understand to be directed to claim 11. Davey et al. neither teach nor suggest that the polymeric films are necessarily elastomeric or that the primers have the recited molecular weights.

Applicants respectfully submit that Davey et al.'s urethane primer coated as a layer itself does not necessarily have the same molecular weight as a urethane included in an ink composition.

Finally, Applicants disagree with the Examiner's statement, to the extent it is understood, at page 2, paragraph 4 of the present Office Action that the image of the instant claims is not specified. It is Applicants' understanding that this comment is also directed to claim 11. Claim 11 recites the step of coating an imagewise layer of a urethane polymer-containing ink composition onto an elastomeric bandage, which Applicants submit specifies the image.

Nonetheless, despite these comments by the Examiner, as there is no teaching or suggestion of Applicants' methods for printing an image on an elastomeric bandage, improving durability of an image on an elastomeric bandage, or limiting abrasion of an ink on an elastomeric bandage, Applicants respectfully submit that the present claims are not anticipated by Davey et al. Reconsideration and withdrawal of the rejection is, therefore, respectfully requested.

The 35 U.S.C. §103 Rejection

The Examiner rejected claims 11-13, 16-45 and 49-52 under 35 U.S.C. §103(a) as being unpatentable over Davey et al. (U.S. Patent No. 5,162,141) in view of Hassell (U.S. Patent No. 4,334,530) and Miyamoto et al. (EP Patent No. 596503). Applicants respectfully point out that the cancellation of claims 34 and 38 render rejection as to these claims moot. As to the remaining pending claims, Applicants respectfully traverse this rejection.

For the reasons discussed above, Applicants submit that the present claims are novel over Davey et al. Applicants further submit that the present claims are also nonobvious over Davey et al. in view of Hassell and Miyamoto et al., and that Davey et al. and Miyamoto et al. are drawn to nonanalogous art.

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"In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). Davey et al. disclose a polymeric sheet having an incompatible ink permanently bonded thereto (Davey et al. column 2, lines 35-37). A further object is to provide a floor covering including a polymeric sheet and lithographic ink or electrographic toner which will have sufficient adhesion to permit use as a floor covering (Davey et al., column 2, lines 43-47). Applicants respectfully submit that the field of adhering incompatible inks to polymeric films, particularly films suitable as floor coverings is not reasonably pertinent to Applicants' field of endeavor, that being methods and articles including an ink or an image on an elastomeric bandage. Floorings are relatively rigid, and permanent, requiring the ability to withstand relatively heavy bodies walking and sliding over the surfaces. Bandages, however, are relatively flexible and elastomeric, requiring any image thereon to be able to withstand forming to and flexing with an animate body.

Additionally, there is no similarity in structure or function between Applicants' elastomeric bandages and the polymeric sheets of Davey et al. that are useful for floor coverings. Furthermore, there would be no reason for one of skill in the art of printing inks and images on elastomeric bandages to look to the field of polymeric sheets suitable as floor coverings to address the problems solved by Applicants' invention. The Examiner pointed out in the present Office Action at page 3 to page 4, paragraph 5, that a bandage does not get nearly the stresses and strains as flooring. Applicants submit that it is not necessarily the degree of the stresses and strains to which a bandage is subjected to that is of concern in the art, but the type of stresses and strains. A bandage is required to form to and flex with bodily movements once it is affixed to a body. Such stresses and strains are not required of a flooring, which remains essentially in the same position once it is fixed to a surface. There would be, therefore, no reason for one skilled

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in the art of elastomeric bandages to look to the art of floorings to provide solutions for the stresses and strains inherent to the art of bandages.

Miyamoto et al. discloses a polyurethane resin as a binder with a pigment for use on plastic films (Miyamoto et al., page 6, lines 32-33, 35) or as a laminating adhesive (Miyamoto et al., page 7, line 9). The resins relate to use as flexible packaging, particularly in the food packaging industry (Miyamoto et al., page 2, lines 6-9). However the polymer film on which the resins are printed or extruded substrates are not necessarily elastomeric.

Hassell teaches marking or indicia on an adhesive bandage. However, it does not disclose a method for improving durability of an image, or limiting abrasion of an ink on an elastomeric bandage, nor does it indicate that such problems exist in the art of printing indicia on adhesive bandages.

Therefore, even if Davey et al. were combined with Miyamoto et al. and Hassell, it would not provide methods and articles including an image on an elastomeric bandage as claimed by Applicants. Applicants respectfully submit that the present claims are, therefore, not rendered obvious.

Furthermore, Applicants submit that Davey et al. and Miyamoto et al., drawn to nonanalogous art, may not be combined with Hassell. As pointed out above, Davey et al. relate to floor coverings and, therefore are drawn to nonanalogous art. Applicants submit that Miyamoto et al., relating to food packaging, and particularly to boiling and retorting (Miyamoto et al., page 7, lines 9-10, page 12, line 45 to page 13, line 8, and page 18, Table 5), are also drawn to nonanalogous art. Applicants submit that art of the food packaging industry is not reasonably pertinent to Applicants' field of endeavor, methods and articles including images on elastomeric bandages. Further, there is no motivation for one of skill in the art of elastomeric bandages to look to the food packaging industry to provide the articles and methods of Applicants' claims. Applicants submit, therefore, that Miyamoto et al. is drawn to nonanalogous

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art and, as such, may not be used, in combination with Davey et al. and Hassell, in an obviousness rejection over the present claims.

Finally, there is no teaching or suggestion to one of skill in the art to modify the cited documents in such a way as to provide the invention as claimed by Applicants. Applicants submit that both Davey et al. and Miyamoto et al. are drawn to nonanalogous art, and there is no teaching or suggestion in Hassell whatsoever that would suggest to one of skill in the art to modify Davey et al., alone or in combination with Miyamoto et al., to provide Applicants' claims.

Applicants submit, therefore, that the present claims are not rendered obvious by Davey et al., either alone or in combination with Hassell and Miyamoto et al. Reconsideration and withdrawal of the rejection is respectfully requested.

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Summary

It is respectfully submitted that the pending claims 11-13, 16-33, 35-37, 39-45, and 49-52 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted for
Wayne K. DUNSHEE et al.

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CERTIFICATE UNDER 37 CFR §1.8:

The undersigned hereby certifies that this paper is being transmitted by facsimile in accordance with 37 CFR §1.6(d) to the Patent and Trademark Office, addressed to Assistant Commissioner for Patents, Attn: BOX AF, Washington, D.C. 20231, on this 26th day of Aug, 2002, at 10:15 pm (Central Time).

By: Kathleen Franklin
Name: KATHLEEN FRANKLIN

**APPENDIX A - SPECIFICATION/CLAIM AMENDMENTS
INCLUDING NOTATIONS TO INDICATE CHANGES MADE**

Serial No.: 09/577,551
Docket No.: 53481US009 (formerly 53481USA1B)

Amendments to the following are indicated by underlining what has been added and bracketing what has been deleted. Additionally, all amendments have been marked in boldface type.

In the Claims

For convenience, all pending claims are shown below.

11. (AMENDED) A method for improving durability of an image on an elastomeric **bandage** **[substrate]** comprising the step of:
coating an imagewise layer of a urethane polymer-containing ink composition onto an elastomeric substrate, **which forms a part of the elastomeric bandage**, wherein the urethane polymer comprises a number average molecular weight in the noncross-linked form of about 1,500 to about 50,000.
12. The method of Claim 11 wherein the urethane polymer-containing ink composition is a water-based composition comprising a dispersion of pigment.
13. The method of Claim 11 wherein the urethane polymer-containing compound further comprises a cross-linker to cross-link the urethane polymer.
16. (AMENDED) A method for printing an image on an elastomeric **bandage** **[substrate]** comprising the step of:
printing an image **onto an elastomeric substrate, which forms a part of the elastomeric bandage**, using at least one ink composition comprising a stable nonpolyethylene containing aqueous dispersion of pigment and particles of a urethane polymer.

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17. The method of Claim 16 further comprising the step of coating a layer of a urethane polymer-containing composition onto the elastomeric substrate before the printing step.
18. The method of Claim 16 wherein the urethane polymer comprises a number average molecular weight in the noncross-linked form of about 1,500 to about 50,000.
19. The method of Claim 17 wherein the urethane polymer-containing compound of the coating step further comprises a cross-linker to cross-link the urethane polymer.
20. The method of Claim 16 wherein the ink composition further comprises a cross-linker to cross-link the urethane polymer.
21. The method of Claim 16 wherein the ink composition is provided in at least one layer of ink in the printed image.
22. The method of Claim 16 wherein at least one ink composition comprises a dispersion of white pigment.
23. The method of Claim 16 wherein the at least one ink composition comprises at least one layer of ink in the image.
24. The method of Claim 16 wherein the at least one ink composition is in the last ink layer printed in the image.
25. (AMENDED) A method for printing an image on an elastomeric bandage [substrate] comprising the steps of:

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printing a first layer of ink onto an elastomeric substrate, which forms a part of the elastomeric bandage, the first layer of ink comprising a stable aqueous dispersion of pigment and particles of a urethane polymer; and

printing an image over the first layer of ink wherein the last layer of ink, farthest from the substrate, comprises a stable aqueous dispersion of pigment and particles of a urethane polymer.

26. The method of Claim 25 wherein at least one layer of ink is printed using a nonaqueous-based ink.
27. The method of Claim 25 wherein the ink composition in the first layer of ink further comprises a cross-linker to cross-link the urethane polymer.
28. The method of Claim 25 wherein the first layer comprises an ink comprising a white pigment.
29. The method of Claim 25 wherein an opaque layer of white pigment is disposed between the first layer of ink and the image.
30. The method of Claim 25 wherein the image is printed with an ink composition comprising a stable aqueous dispersion of pigment and particles of a urethane polymer.
31. The method of Claim 25 wherein the last layer of ink, farthest from the substrate, further comprises a cross-linker to cross-link the urethane polymer.
32. The method of Claim 25 wherein the image is covered with a coating comprising a

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backsize or sealer.

33. The method of Claim 25 wherein the sealer is a urethane polymer adhesive.

34. CANCEL

35. (AMENDED) The method of Claim 16 [34] wherein the bandage comprises the elastomeric substrate and an adsorbent pad.

36. The method of Claim 35 wherein the image is printed over the adsorbent pad.

37. (AMENDED) The method of Claim 16 [34] wherein the elastomeric substrate is selected from a group consisting of polyurethane, elastomeric polyethylene, low density polyethylene and a nonwoven elastomeric web.

38. CANCEL

39. (AMENDED) A method for limiting abrasion of an ink on an elastomeric bandage comprising the steps of:

applying at least one ink composition comprising a water-based dispersion of a urethane polymer to an elastomeric [surface] substrate, which forms a part of the elastomeric bandage, in an imagewise fashion.

40. The method of Claim 39 wherein the composition is an ink composition comprising a stable aqueous dispersion of pigment and particles of a urethane polymer and a cross-linker to cross-link the urethane polymer.

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41. The method of Claim 39 wherein the at least one ink composition of the printing step comprises a stable aqueous dispersion of pigment and particles of a urethane polymer and a cross-linker to cross-link the urethane polymer.
42. The method of Claim 39 wherein the printing step is selected from the group consisting of rotogravure printing, flexographic printing and offset printing.
43. The method of Claim 39 wherein the elastomeric substrate is selected from a group consisting of polyurethane, elastomeric polyethylene, low density polyethylene, and a nonwoven elastomeric web.
44. The method of Claim 39 wherein the composition comprises a water-based pigment.
45. The method of Claim 39 wherein the water-based pigment is a white pigment.
49. An elastomeric bandage comprising a printed image wherein the printed image is prepared from at least one ink composition comprising a stable aqueous dispersion of pigment and particles of a urethane polymer.
50. The elastomeric bandage of Claim 49 wherein the at least one ink composition further comprises a cross-linker to cross-link the urethane polymer.
51. The elastomeric bandage of Claim 49 wherein the bandage further comprises a pad.
52. The elastomeric bandage of Claim 51 wherein the image is printed over the pad.